Weighing in on malaria-attributable low birthweight in Africa

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Imagine providing care for 900 000 low birthweight (LBW; lighter than 2500 g) newborn babies each year in sub-Saharan Africa—all attributable to preventable and treatable malaria. Many of these LBW babies will be born in rural and impoverished settings where access to health care is poorest and the risk of complicating factors, including other infectious diseases and undernutrition, is most pronounced. This scenario, with the caveat that no malaria prevention services are provided, is the sobering estimate of malaria-attributable LBW for 2010 provided by Patrick Walker and colleagues[1] in this issue of *The Lancet Global Health*. Prevention services are provided in many places, but present coverage of these services in sub-Saharan African countries is poor, with 22% of the population estimated to have received intermittent preventive treatment and 39% having used insecticide-treated mosquito nets (ITNs).[2] Walker and colleagues are likely to follow soon with updated modelled estimates for the benefit achieved with these preventive actions and the remaining LBW burden still to be addressed.

The long and costly care for LBW infants is daunting enough for families and health services, but the increased LBW-associated risk of neonatal and infant death is especially concerning.[3] Because LBW is the consequence of prematurity, intrauterine growth retardation (IUGR), or a combination, and because the risk of infant mortality differs and is substantially higher for premature newborn babies compared with term-IUGR newborn babies,[4,5] we cannot directly translate this LBW estimate into an infant mortality estimate. Unfortunately, malaria infection during pregnancy contributes to both prematurity and IUGR,[6,7] and thus the associated mortality risk is substantial. Again, because relevant data exist, hopefully Walker and colleagues (or others) can also provide estimates for the mortality risk both with and without interventions in sub-Saharan Africa and build on the existing estimates.[8]

Some suspicion always surrounds modelled estimates of health outcomes. However, the methods used here include the key components of known biology and immunology and draw attention to crucial issues[9]—that young women and those in their first pregnancy are especially at risk, that immunity develops with repeated exposure during pregnancies, and that the likelihood of detection of infection is highest at the first antenatal clinic visit because of the cumulative untreated infections before and during pregnancy until the first visit. Walker and colleagues point out that prevention in young women of reproductive age is an important opportunity not presently targeted by malaria programmes or antenatal clinic programmes. Teenagers are the age group least likely to use malaria prevention interventions such as ITNs, and typically have the highest malaria infection rates.[10] The pre-pregnancy period is also increasingly recognised as important, but challenging for other conditions and interventions including immunisations for measles, rubella, hepatitis, meningitis, tetanus, human papillomavirus,[11] and, of course, family planning. Malaria programmes should add their voice to the efforts to reach these young women, and, as service delivery methods improve through schools or other means, malaria detection and treatment followed by ongoing malaria prevention should be a core part of the service in malaria-endemic settings.

An additional opportunity exists because of this cumulative acquisition of malaria infection that might be diagnosed at the first antenatal clinic visit, especially in first pregnancies. Some African country programmes are embarking on elimination and seek to identify and clear all malaria infections in all age groups, including women of reproductive age and pregnant women. This presents an excellent opportunity to end malaria-attributable prematurity, IUGR, and LBW, and the health risks to the mother and her newborn baby. However, with this cumulative interval of potential infection, the pregnant women might carry some of the remaining infections that are occurring in the population. The typical high rates of antenatal clinic attendance by pregnant women in Africa can aid their inclusion in an important surveillance effort in which malaria testing in women at first antenatal clinic visit can show either residual infection in the population or absence of infection that might be an indicator that elimination is imminent or has been achieved. Finally, under such elimination efforts, surveillance in these highest risk populations must persist, because any residual infections in these women can be deadly.

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